

Abstract Submitted  
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**Förster resonant energy transfer between CdSe nanocrystals:  
An empirical pseudopotential/transition density cube approach<sup>1</sup>** JOSHUA  
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study the energy transfer between semiconductor nanocrystal dots and rods of CdSe  
using a semiempirical pseudopotential method (SEPM) description of the electronic  
structure of the nanocrystals, followed by evaluation of the Coulombic contribution  
to the energy transfer evaluated using the transition density cube (TDC) method.  
Our results are compared to the dipole-dipole theory of Förster to characterize the  
effects of nanocrystal shape, distance, and orientation. In agreement with previous  
effective-mass and tight-binding studies, we find that the coupling between spheri-  
cal nanocrystals is well described by the Förster model. In contrast, we find that  
rod-shaped nanocrystals display more complicated behavior, which may be relevant  
to exciton migration in all-inorganic nanorod-based photovoltaic devices.

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